Appl. No. : 09/828,550
Filed : April 6, 2001

REMARKS

Applicant respectfully requests the Examiner to reconsider the above-captioned application in view of the above amendments and the following remarks.

Matters of Form

Per the Examiner's request, the claims previously numbered Claims 46-65 have been renumbered to Claims 49-58.

Claim rejections

Claims 1-4, 6-9, 13, 14, 46, 47, 58-65 and 67 are rejected under 35 U.S.C. 103(a) as unpatentable over Johnsgard et al. (USPN 6,342,691) in view of Shih et al. (USPN 6,120,640). Claims 48, 66 and 68 are rejected under 35 U.S.C. 103(a) as unpatentable over Johnsgard et al. and Shih et al in view of Koike (USPN 5,065,698). Claims 1-4, 6-9, 10, 13, 14 and 47 are rejected under 35 U.S.C. 103(a) as unpatentable over Wengert et al (USPN 6,325,858) in view of Shih et al. Claims 46 and 48 are rejected under 35 U.S.C. 103(a) as unpatentable over Wengert et al. and Shih et al. in view of Koike.

As stated by the Examiner, "none of the references teach a devitrification barrier coating having a thickness of about 1 to 10,000 angstroms." A *prima facie* case of obviousness requires that "there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." *M.P.E.P. 2143.* As argued by the Applicant in the previous response, the applied references do not contain a suggestion or motivation to form a devitrification barrier coating having a thickness of about 1 to 10,000 angstroms. In response to Applicant's argument, the Examiner states that "it would have been obvious to those of ordinary skill in the art to optimize the thickness of the silicon nitride devitrification barrier." *Id.* Applicant respectfully disagrees with this conclusion.

It is impermissible to "pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art." Bausch & Lomb v. Barnes-Hind/Hydrocurve, 230 U.S.P.Q. 416, 419 (Fed. Cir. 1986) (quoting In re Wesslau, 147 U.S.P.Q. 91, 393 (C.C.P.A. 1965)). The reference must be considered as a whole, giving due weight to the

reference's portions arguing against or teaching away from the claimed invention. Bausch & Lomb, 230 U.S.P.Q. at 42.

Applicant respectfully submits that the Examiner is not giving due weight to the teachings of the applied references, which teach away or argue against the claimed invention. For example, Johnsgard et al. disclosed an insulating reactor wall that may be coated with a *reflective layer* of silicon nitride. *See* Col. 17, lines 22-30. With respect to the support surfaces claimed in Claim 1, Johnsgard et al. teaches away from using silicon nitride as a reflective coating. Specifically, Johnsgard et al. states that one alternative to glazed opaque quartz is to use insulating walls "formed from a transmissive material such as clear quartz [that have been] coated with a reflective material such as alumina, silicon carbide or silicon nitride." *Id.* "However, these alternatives [to glazed opaque quartz] tend to be less durable than glazed opaque quartz, often flake and spall, and may interfere with the chemistry of some processes." *Id.* Accordingly, one of skill in the art would not be motivated to apply the silicon nitride reflective coating of Johnsgard et al. to a support surface because support surfaces have mechanical interfaces which would exacerbate flaking and spalling.

Shih et al. disclosed an erosion resistant barrier of silicon nitride as an alternative to B_4C. However, no thickness is disclosed for this silicon nitride barrier and the disclosed thickness of the B_4C barrier (approximately 1,250,000 angstrom) is significantly larger than the claimed range of 1 to 10,000 angstroms. *See* Col. 9, lines 19-25 and Col. 10, lines 50-65. In addition, the erosion resistant barrier is for walls made of aluminum, aluminum based materials, stainless steels and other steels. *See* Col. 11, 45-55. The thickness of the barrier is determined by the erosion rates in the reactor. *See* Col. 5, lines 30-34. Accordingly, Shih et al. would merely suggest to one of skill in the art a relatively thick erosion barrier for metallic walls. As taught by Shih et al., the thickness of this coating would be determined by the erosion rates of the reactor. This reference therefore teaches away from the very thin, low mass coating as recited in the claims.

With respect to Wengert et al., the Examiner states that Wengert et al. teaches "the support surface being covered at least in part by a devitrification barrier coating made of silicon nitride that is bonded (inherent) to the support surface." The Examiner also states "that it would have been obvious to one of ordinary skill in the art at the time the invention was made for Wengert et al. to deposit his silicon nitride devitrification barrier coating at desired thicknesses over portions

of his quartz vitrification parts as taught by Shih." The deficiencies with Shih have been highlighted above. However, with respect to Wengert et al., Applicant respectfully submits that the Examiner has misinterpreted this reference. Wengert et al. clearly does not disclose a barrier coating. Instead, Wengert et al. is directed to a separate component or sheath that fits over the corresponding quartz component. *See* Col. 7, lines 5-10. Therefore, Wengert et al. and Shih et al. represent references of radically different teachings that are directed to radically different purposes.

The Examiner states that "it is well established that thermal isolation of any material, including CVD equipment, depends on both the thermal conductivity of the protective coating and the thickness of the protective coating." The Examiner then sets forth Fourier's law. However, the claimed barrier is not a thermal barrier but a devitrification barrier. As such, while Fourier's law may guide one of ordinary skill in the art in developing a thermal barrier, it does not make obvious the thickness of a devitrification barrier.

Finally, *irrespective* of the claimed thickness of the silicon nitride coating, there is simply no suggestion or teaching in the applied references to apply a devitrification barrier coating to a support surface (independent Claim 1) or a thermocouple (independent Claim 58).

CONCLUSION

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. Accordingly, early issuance of a Notice of Allowance is most earnestly solicited.

The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicant's attorney in order to resolve such issue promptly.

Appl. No. : 09/828,550
Filed : April 6, 2001

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: May 17, 2004

By: _____

Rabinder N. Narula
Registration No. 53,371
Attorney of Record
2040 Main Street
Fourteenth Floor
Irvine, CA 92614
(949) 760-0404

H:\DOCS\RNN\RNN-8310.DOC
051404